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EXAMINER
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WOLLSCHLAGER, JEFFREY MICHAEL

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* CYRIL CHEVILLARD and  
JOSE M. SOSA

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Appeal 2010-006077  
Application 10/766,672  
Technology Center 1700

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Before TERRY J. OWENS, PETER F. KRATZ, and  
LINDA M. GAUDETTE, *Administrative Patent Judges*.

OWENS, *Administrative Patent Judge*.

DECISION ON APPEAL  
STATEMENT OF THE CASE

The Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's rejection of claims 2, 4, 5 and 26-34. Claims 8-25, which are all of the other pending claims, stand withdrawn from consideration by the Examiner. We have jurisdiction under 35 U.S.C. § 6(b).

*The Invention*

The Appellants claim a method for melt processing polystyrene.  
Claim 31 is illustrative:

31. A method of melt processing polystyrene comprising:

providing high impact polystyrene (HIPS);

melt blending the HIPS with a second polymer exhibiting a melt flow index (MFI) of from about 20 g/10 min. to about 40 g/10 min. as measured by ASTM D1238 condition g to form modified HIPS, wherein the modified HIPS comprises greater than 50 wt% HIPS; and

melt processing the modified HIPS to form a polystyrene article.

#### *The References*

Holden	4,188,432	Feb. 12, 1980
Agarwal	5,541,285	July 30, 1996
Kaulbach	6,713,141 B2	Mar. 30, 2004

(effective filing date Apr. 10, 1998)

#### *The Rejections*

The claims stand rejected as follows: claims 2, 4, 5 and 26-34 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement, claims 2, 4 and 26-34 under 35 U.S.C. § 103 over Holden, and claim 5 under 35 U.S.C. § 103 over Holden in view of Agarwal and Kaulbach.

#### OPINION

The rejection under 35 U.S.C. § 112, first paragraph is affirmed. The rejections under 35 U.S.C. § 103 are affirmed as to claims 2, 4, 5, 26-28 and 30-34 and reversed as to claim 29.

#### *Rejection under 35 U.S.C. § 112, first paragraph*

For an applicant to comply with the 35 U.S.C. § 112, first paragraph, written description requirement, the applicant's specification must "convey

with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention.” *Carnegie Mellon Univ. v. Hoffmann-La Roche Inc.*, 541 F.3d 1115, 1122 (Fed. Cir. 2008), quoting *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1563-64 (Fed. Cir. 1991).

The Examiner argues that the Appellants’ original disclosure lacks written descriptive support for the limitation in claim 31 that the melt flow index (MFI) is measured by ASTM D1238 condition G (Ans. 3).

The Appellants point out that their original disclosure incorporates US 5,540,813 to Sosa et al. by reference (Spec. 1:22-23) and argue that written descriptive support for that limitation is provided by that reference’s Table III wherein note c states that the MFIs in that table, which are MFIs of polystyrene and high impact polystyrene, are “measured according to ASTM Method D-1238, Condition G” (Br. 3).

By incorporating Sosa by reference, the Appellants merely have incorporated into their Specification what is disclosed by Sosa, the relevant portion being the MFIs of the polymers in Table III determined according to ASTM D1238 condition G. The Appellants’ Specification does not state that the method used to measure their MFIs is the same as that used by Sosa, and Sosa does not disclose that the only method for determining the MFI of polystyrene or high impact polystyrene is ASTM D1238 condition G. The Examiner finds (Ans. 9), and the Appellants do not dispute, that MFI can be measured by ASTM and ISO methods and that ASTM D1238 includes conditions A-X. Because that finding is reasonable and the Appellants have not challenged it, we accept it as fact. *See In re Kunzmann*, 326 F.2d 424, 425 n.3 (CCPA 1964).

Accordingly, we are not persuaded of reversible error in the Examiner's determination that the Appellants' original disclosure lacks written descriptive support for the claim 31 requirement that the MFIs are measured by ASTM D1238 condition G.

*Rejections under 35 U.S.C. § 103*

We need to address only the claims separately argued by the Appellants, i.e., independent claim 31 and dependent claims 28, 29 and 32 (Br. 3-4). All of the other claims stand or fall with claim 31, from which they depend. *See* 37 C.F.R. § 41.37(c)(1)(vii) (2007).<sup>1</sup>

*Claim 31*

Claim 31 requires forming a modified high impact polystyrene (HIPS) by melt blending HIPS in an amount greater than 50 wt% with a second polymer having a melt flow index (MFI) of about 20 to about 40 g/10 min as measured by ASTM D1238 condition G.

Holden discloses a thermoplastic article which is resistant to environmental stress cracking, such as that induced by exposure to fatty substances, comprising (A) 60-93 wt% of a polystyrene component consisting of 100 to about 45 wt% of a thermoplastic styrene-diolefin elastomer graft copolymer (which corresponds to the Appellants' HIPS) and 0 to about 55 wt% of thermoplastic styrene homopolymer (which corresponds to the Appellants' second polymer (Spec. 6:26-28)), (B) 2 to 30 wt% of polyethylene or polypropylene, and (C) 5 to 20 wt% of a block copolymer X-Y-X where each X is a polystyrene block of about 5,000 to 10,000 molecular weight and Y is a hydrogenated polybutadiene block of

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<sup>1</sup> Although additional references are applied to claim 5, the Appellants do not provide a substantive argument as to the separate patentability of that claim (Br. 5).

about 25,000 to 50,000 molecular weight, the total molecular weight of the block copolymer being less than about 60,000 (col. 6, ll. 1-19). The thermoplastic styrene homopolymer, which Holden calls a general purpose polystyrene (GPS), suitably can have an MFI for injection molding of 5-25 determined by ASTM D1238 condition G (col. 6, ll. 47-50; col. 7, ll. 7-10; col. 10, l. 44). The exemplified polymer blends are dry blended and passed through a twin screw extruder operated at a maximum melt temperature of about 470 °F (col. 9, ll. 58-65).

The Appellants argue that Holden's disclosure of dry blending the polymer components to form a mixture and melting the mixture in an extruder would not have suggested the Appellants' melt blending (Br. 4).

The claim 31 transition term "comprising" opens the claim to steps other than those recited. *See In re Baxter*, 656 F.2d 679, 686 (CCPA 1981). Thus, the claim encompasses dry blending before the recited melt blending. Moreover, the Appellants disclose that, like Holden's polymers, the Appellants' polymers can be melt blended in an extruder (Spec. 7:4-7).

The Appellants argue that because the GPSs in Holden's examples (Tables 3, 5) all have MFIs well below the Appellants' minimum of about 20 g/10 min, Holden does not disclose the Appellants' MFI with sufficient specificity to render the claimed method obvious (Br. 4).

Holden is not limited to its examples. *See In re Fracalossi*, 681 F.2d 792, 794 n.1 (CCPA 1982). Instead, all disclosures there must be evaluated for what they would have fairly suggested to one of ordinary skill in the art. *See In re Boe*, 355 F.2d 961, 965 (CCPA 1966). Holden's disclosure that the GPS's MFI suitably can be 5-25 (col. 7, ll. 7-10) would have fairly

suggested, to one of ordinary skill in the art, all values within that range including those within the Appellants' range of about 20 to about 40.

Thus, we are not convinced of reversible error in the rejection of claim 31.

*Claim 28*

Claim 28 requires that the article has an Izod Impact of 0.8 to 1.7 ft-lb/in.

The Appellants argue that Holden's articles have "Izod Impacts significantly greater than claimed in claim 28" (Br. 4).

Holden exemplifies an extruded sheet (I-B) which is made from a composition containing 40 wt% HIPS, 40 wt% GPS, 8 wt% polypropylene and 12 wt% block copolymer and has an Izod Impact of 1.35 ft-lb/in (Table 3). Hence, we are not persuaded by the Appellants' argument that Holden's articles have Izod Impacts significantly greater than that required by the Appellant's claim 28.

*Claim 29*

Claim 29 requires that the article has a flexural strength of 8,000 to 10,500 psi.

The Examiner argues: "Holden et al. suggest utilizing the same claimed materials while practicing the same claimed method in the same claimed manner. Accordingly, it follows that the same claimed effects and physical properties (e.g. flexural strength) would be implicitly present in the article produced by Holden et al." (Ans. 6).

Holden's exemplified extruded sheet containing both HIPS and GPS but also containing polypropylene and block copolymer has a flexural strength of 7,250 psi (Table 3) which is below the Appellants' claim 29's

minimum of 8,000 psi. A comparison of the flexural strengths of Holden's extruded sheet I-Y, which contains no polyolefin or block copolymer, and Holden's extruded sheet I-A, which contains polyolefin and block copolymer but no GPS, shows that elimination of the polyolefin and block copolymer raises the flexural strength (from 5,600 to 7,000 psi, Table 3). Also, a comparison of the flexural strengths of Holden's extruded sheet I-B, which contains HIPS, GPS, polyolefin and block copolymer, and Holden's extruded sheet I-A which contains polyolefin and block copolymer but no GPS, shows that adding GPS raises the flexural strength (from 5,600 to 7,250 psi; Table 3). However, Holden teaches that the polyolefin provides the desired resistance to fatty substances and that the block copolymer is believed to interlock the polymer structure networks in the articles (col. 5, ll. 59-68). The Examiner has not established that in view of those benefits of the polyolefin and block copolymer, one of ordinary skill in the art would have been led to eliminate those components such that a sheet having a flexural strength high enough to be within the Appellants' 8,000-10,500 psi range is obtained.

Thus, we do not sustain the rejection of the Appellants' claim 29.

*Claim 32*

Claim 32 requires that the modified HIPS consists essentially of HIPS and the second polymer.

The Appellants argue that "consists essentially of" excludes Holden's polyolefin and block copolymer which are essential components (Br. 4).

The term "consisting essentially of" includes not only what is specifically recited in the Appellants' claim, but also any other materials which do not materially affect the basic and novel characteristics of the



claimed invention. *See In re Herz*, 537 F.2d 549, 551-52 (CCPA 1976); *In re De Lajarte*, 337 F.2d 870, 873-74 (CCPA 1964); *In re Janakirama-Rao*, 317 F.2d 951, 954 (CCPA 1963).

The Appellants do not state what they consider to be the basic and novel characteristics of their claimed method. The Examiner finds that the basic and novel characteristic is the use of the relatively high MFI second polymer in combination with a relatively low MFI HIPS (Ans. 13). Because that finding is not challenged by the Appellants and that combination is disclosed by Holden (col. 6, ll. 3-19), we are not persuaded of reversible error in the rejection of claim 32.

#### DECISION/ORDER

The rejection of claims 2, 4, 5 and 26-34 under 35 U.S.C. § 112, first paragraph, written description requirement is affirmed. The rejection of claims 2, 4 and 26-34 under 35 U.S.C. § 103 over Holden is affirmed as to claims 2, 4, 26-28 and 30-34 and reversed as to claim 29. The rejection of claim 5 under 35 U.S.C. § 103 over Holden in view of Agarwal and Kaulbach is affirmed.

It is ordered that the Examiner's decision is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

#### AFFIRMED

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